WHAT IS CLAIMED IS:

1. A reversible self-cleaning window assembly comprising:

a) a reversible frame assembly including a window sash adjoined to an outer frame by one or more pivoting devices; and

b) a substrate retained by the window sash including an exterior face and an interior face, wherein one or more photocatalytic layers are applied to the exterior face and interior face.

2. The reversible self-cleaning window assembly according to claim 1, wherein the substrate is a glass pane.

3. The reversible self-cleaning window assembly according to claim 1, wherein the substrate is an insulated glass unit.

4. The reversible self-cleaning window assembly according to claim 1, wherein the photocatalytic layer comprises an oxide of a metal selected from the group consisting of titanium, iron, silver, copper, tungsten, aluminum, zinc, strontium, palladium, gold, platinum, nickel, and cobalt.

5. The reversible self-cleaning window assembly according to claim 4, wherein said metal oxide comprises titania.

6. A reversible self-cleaning window assembly comprising:

a) a transparent substrate having generally opposed first and second faces, each face bearing a functional coating, the said functional coating comprising a photocatalytic material adapted to chemically degrade organic contaminant that accumulates on the first or second face of said substrate when exposed to ultraviolet radiation; and

b) an outer frame operably adjoined to a sash, said sash supporting the substrate, and wherein the outer frame and sash are configured to allow the substrate to be selectively oriented

in a primary orientation or secondary orientation, the primary orientation characterized in that said first face is exposed to a high ultraviolet radiation environment and said second face is exposed to a low ultraviolet radiation environment, the secondary orientation characterized in that said second face is exposed to said high ultraviolet radiation environment while said first face is exposed to said low ultraviolet radiation environment.

7. The reversible self-cleaning window assembly according to claim 6, wherein the transparent substrate is glass.

8. The reversible self-cleaning window assembly according to claim 6, wherein the transparent substrate is an insulated glass unit.

9. The reversible self-cleaning window assembly according to claim 6, wherein the sash is configured such that when the transparent substrate is secured in the outer frame, it can be removed and resecured in either the primary or the secondary orientation.

10. The reversible self-cleaning window assembly according to claim 6, wherein the window assembly includes a pivot device about which the transparent substrate can be rotated between the primary and secondary orientation.

11. The reversible self-cleaning window assembly according to claim 6, wherein the photocatalytic material comprises sputtered material.

12. The reversible self-cleaning window assembly according to claim 11, wherein the photocatalytic layer comprises sputtered material having a substantially uniform thickness over the first face and second face of the substrate.

13. The reversible self-cleaning window assembly according to claim 6, wherein said photocatalytic material comprises an oxide of a metal selected from the group consisting of

titanium, iron, silver, copper, tungsten, aluminum, zinc, strontium, palladium, gold, platinum, nickel, and cobalt.

14. The reversible self-cleaning window assembly according to claim 13, wherein said metal oxide comprises titania.

15. A method of reducing transparent substrate surface contamination, the method comprising the steps of:

a) providing a transparent substrate having generally opposed first and second major surfaces, each major surface containing a functional coating, the said functional coating comprising a photocatalytic material adapted to chemically degrade organic contaminants;

b) positioning the transparent substrate in a primary orientation wherein said first major surface is exposed to a high ultraviolet radiation environment while said second major surface is exposed to a low ultraviolet radiation environment; and

c) reversing the orientation of the transparent substrate once organic material has accumulated on the second major surface by positioning the window in a secondary orientation wherein said second major surface is exposed to said high radiation environment while said first major surface is exposed to said low radiation environment, thereby activating the photocatalytic material on said second major surface to chemically degrade said accumulated organic material.

16. The method of reducing transparent substrate surface contamination according to claim 15, wherein the transparent substrate is glass.

17. The method of reducing transparent substrate surface contamination according to claim 15, wherein the transparent substrate is an insulated glass unit.

18. The method of reducing transparent substrate surface contamination according to claim 15, wherein the substrate is included in a window assembly that has a pivot device about which the substrate can be rotated between the primary and secondary orientations.

19. The method of reducing transparent substrate surface contamination according to claim 15, wherein the photocatalytic material comprises sputtered material.

20. The method of reducing transparent substrate surface contamination according to claim 19, wherein the photocatalytic material comprises sputtered material having a substantially uniform thickness over the first face and second face of the substrate.

21. The method of reducing transparent substrate surface contamination according to claim 15, wherein said photocatalytic material comprises an oxide of a metal selected from the group consisting of titanium, iron, silver, copper, tungsten, aluminum, zinc, strontium, palladium, gold, platinum, nickel, and cobalt.

22. The reversible self-cleaning window assembly according to claim 21, wherein said metal oxide comprises titania.